

REMARKS

Claims 1-27 are pending after entry of this paper. Claims 5-6, 11-12, 17-18, and 23-24 have been provisionally elected. Claims 1-4, 7-10, 13-16, 19-22, and 25-27 are provisionally withdrawn.

Amendments to the Specification

The specification has been amended at paragraph [0047] on pages 41-42 of the specification as filed, for clarity. No new matter is introduced by these amendments. Support can be found throughout the specification, claims, and figures as filed.

Amendments to the Claims

Claims 5-6, 11-12, 17-18, and 23-24 have been amended to replace the word “an” with “the” for clarity. No new matter has been introduced by this amendment. Support can be found throughout the instant specification and claims as filed. Additionally, claim 24 has been amended to delete the repeated word “amino” which was duplicated in this claim as a typographical error.

Response to Restriction Requirement under 35 U.S.C. §§121 and 372

Claims 1-27 are pending in this application and have been subjected to election of an invention group and a single disclosed SEQ ID NO. for prosecution on the merits under 35 U.S.C. §121 and §372. In the Examiner's opinion, as set forth in the Detailed Action, the application contains claims directed to four patentably distinct inventions as follows:

Group I: Claims 1-4, 7-10, 13-16, and 19-22 drawn to a DNA encoding protein variants of a protein comprising “an” amino acid sequence represented by a SEQ ID NO or DNA fragment comprising a nucleotide sequence represented by a SEQ ID NO.

Group II: Claims 5-6, 11-12, 17-18, and 23-24 drawn to protein variants of a protein comprising “an” amino acid sequence represented by a SEQ ID NO.

Group III: Claim 25, drawn to a fusion protein comprising variants of a protein comprising “an” amino acid sequence represented by a SEQ ID NO and a peptide tag.

Group IV: Claims 26-27, drawn to an antibody to protein variants of a protein comprising “an” amino acid sequence represented by a SEQ ID NO.

The applicants respectfully request that the Restriction Requirement be withdrawn and all presented claims be examined together on the merits.

In response to the Restriction Requirement, the applicant provisionally elects Group II with traverse, including claims 5-6, 11-12, 17-18, and 23-24 drawn to protein variants of a protein comprising “an” amino acid sequence represented by a SEQ ID NO.

Furthermore, the Examiner is of the opinion that the application contains claims directed to the following patentably distinct sequences of the claimed invention, “the presence of multiple polypeptide sequences and polynucleotide sequences, each with a different SEQ ID NO: allows for a variety of patentably distinct products (Office Action, page 3).” The applicant respectfully requests that the Restriction Requirement be withdrawn and all presented sequences be examined together on the merits.

In response to the Restriction Requirement, the applicant provisionally elects SEQ ID NO:2 with traverse directed to a protein Sgo1 (shugoshin).

The applicant respectfully disagrees with the restriction requirement imposed by the Examiner and the characterizations made of the claimed invention. Accordingly, this provisional election is made with traverse.

No undue burden

It is the Examiner's position that restriction is appropriate because the groups contain claims and/or sequences that are not coextensive and have divergent subject matter. The applicant respectfully disagrees with the Examiner's position.

According to M.P.E.P. §803, there are two criteria for a proper requirement for restriction between patentably distinct inventions:

- (1) The inventions must be independent or distinct as claimed; **and**
- (2) There must be serious burden on the Examiner if restriction is not required.

The applicant respectfully submits that (1) both groups of restricted claims are properly presented in the same application; (2) undue diverse searching would not be required; and (3) all claims should be examined together.

The Examiner has not shown that examination of all the pending claims would require undue searching and place a serious burden on the Examiner, which is a requisite showing for proper issuance of a restriction requirement. In fact, the applicant submits that to search a protein and a nucleic acid which encodes said protein would not be unduly burdensome.

Groups

Applicants submit that since the nucleic acid of the Group I claims can encode the proteins claimed in the Groups II-IV claims, a search of the claimed DNA molecules and

encoded proteins would necessarily overlap, since the nucleic acid sequence provides a deduced amino acid sequence for the protein. Also, the fusion proteins of Group III claims the polypeptides having the same sequences of Group II, and would not require additional searching. Additionally, the antibodies of Group IV claims the polypeptides having the same sequences of Group II, and would not require additional searching. Thus, as restriction based upon search or examination burden alone would appear to be unjustified, applicants request that the claims of Groups I – IV, be considered as a single group. At the very least, applicants argue assert that the polypeptides of Groups II-IV, which have the same sequences, should be considered a single group.

Furthermore, in M.P.E.P. 1850 under PCT Rule 13.1, the unity of invention requirement states that “[t]he international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept.” Applicants assert that the instant claims of the Groups set forth by the Examiner all relate to a polypeptide having the same sequences. The Examiner would not have to perform separate searches for each of the Groups, because they are directed to the same polypeptides sequences. Therefore, it is respectfully requested that the Examiner rejoins Groups I-IV because there is believed to be no undue or serious burden placed on the Examiner in a search of the art and in view of the linking general inventive concept.

Sequences

The Examiner is of the opinion that the sequences of the instant invention are not related in regards to structure and function. The applicants respectfully disagree with the Examiner’s position. The instant invention is related to Sgo1 (shugoshin) protein and its

homologues and paralogues having a regulatory activity of chromosome segregation and DNAs encoding them (*See, e.g.*, the “Technical Field” section on page 1 of the application as filed).

Additionally, the applicants respectfully direct the Examiner’s attention to paragraph [0012] of the instant invention (emphasis added):

As for a protein of the present invention, a protein Sgo1 (shugoshin) comprising an amino acid sequence shown in SEQ ID NO: 2 and having a regulatory activity of chromosome segregation... a paralogue Sgo2 of protein Sgo1 comprising an amino acid sequence shown in SEQ ID NO: 4 and having a regulatory activity of chromosome segregation... a Saccharomyces cerevisiae homologue ScSgo1 of protein Sgo1 comprising an amino acid sequence shown in SEQ ID NO: 6 and having a regulatory activity of chromosome segregation... a protein (NC) comprising an amino acid sequence shown in SEQ ID NO: 8 and having a Neurospora crassa-derived regulatory activity of chromosome segregation... a protein (At) comprising an amino acid sequence shown in SEQ ID NO: 10 or 12 and having a Arabidopsis-derived regulatory activity of chromosome segregation... a protein (Mm) comprising an amino acid sequence shown in SEQ ID NO: 14 or 16 and having a mouse-derived regulatory activity of chromosome segregation... a protein (Hs) comprising an amino acid sequence shown in SEQ ID NO: 18 or 20 and having a human-derived regulatory activity of chromosome segregation...

Thus, the applicants assert that the sequences are related in regards to both structure and function.

The applicants, however, respectfully submit that at the very least, SEQ ID NOs.: 4, 6, 8, 10, 12, 14, 16, 18, and 20 (the subject matter of claims 11-12, 17-18, and 23-24 which are drawn to protein variants represented by those SEQ ID NOs.) should be examined for the merits

together with Group II, SEQ ID NO: 2, (claims 5-6 which are drawn to protein variants of a protein comprising “an” amino acid sequence represented by those SEQ ID NO: 2).

For at least the reasons mentioned above, applicants respectfully request that the Restriction Requirement be withdrawn and all presented claims be examined on the merits.

CONCLUSION

Based on the foregoing amendments and remarks, the applicants respectfully request reconsideration and withdrawal of the election requirement of claims and allowance of this application.

AUTHORIZATION

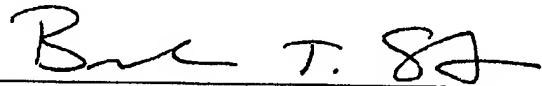
The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. **13-4500**, Order No. 4439-4043.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. **13-4500**, Order No. 4439-4043.

Respectfully submitted,
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